## **EXHIBIT D**

Ex. D - Plaintiffs' Expert Witness K. Keyes Transcript of Deposition (October 30, 2020) - SEALED

PLAINTIFFS' OPPOSITION TO DEFENDANTS' MOTION TO EXCLUDE CERTAIN EXPERT TESTIMONY OF KATHERINE KEYES

	Page 1
1	IN THE UNITED STATES DISTRICT COURT
	FOR THE SOUTHERN DISTRICT OF WEST VIRGINIA
2	
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3	
	THE CITY OF HUNTINGTON,
4	
	Plaintiff,
5	
	v. CIVIL ACTION NO. 3:17-01362
6	
	AMERISOURCEBERGEN DRUG
7	CORPORATION, et al,
8	Defendants.
9	
10	CABELL COUNTY COMMISSION,
11	Plaintiff,
12	vs.
13	
	AMERISOURCEBERGEN DRUG
14	CORPORATION, et al,
15	Defendants.
16	**********
17	
18	Videotaped and videoconference deposition of
19	KATHERINE KEYES, taken by the Defendants pursuant to the
20	West Virginia Federal Rules of Civil Procedure, in the
21	above-entitled action, pursuant to notice, conducted
22	virtually via Zoom, before Twyla Donathan, Registered
23	Professional Reporter and Notary Public, on the 30th day
24	of October, 2020.

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Page 74 I do. Α 1 2 As we talked about, this was the version of 3 your calculation that essentially existed as of your first deposition, the calculation that supports the figures in your first errata. I'm not trying to go 5 back over that. I'm just trying to make sure we're 6 7 properly oriented. Do you see in Column S there is a notation 8 9 that states that for 2009, deaths have been set to 5, 10 as this is the mid point in the range of possible suppression values. Do you see that? 11 12 Α I do. 13 And what does that mean? In the CDC WONDER data, numbers below five 14 15 are suppressed. They're not provided, because it

A In the CDC WONDER data, numbers below five are suppressed. They're not provided, because it could be identifiable. So sometimes when a number is below five, we don't know what the number is -- I'm sorry, when the number is below ten it's suppressed.

O When the number is below ten?

A Yes.

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Q And so if we -- just to see an example of this, if you were to look at Column D for the year 2009, which is what your note references, you have an "NA" listed there. What does the NA represent to

Page 75 1 you? 2 I believe that is values that were 3 suppressed. "NA" means not available or something along 4 those lines? 5 Α 6 Right. 7 And so -- And so even though you don't have a value for 2009 Cabell County, Column D, which is 8 9 the total deaths involving T40.2, T40.3 or T40.4, and even though you don't have a value for Column G in 10 2009, which is the share that excludes -- that is 11 12 only T40.2 and T40.3, and even though you don't have a value in Column J, which is the residual that's 13 T40.4 that doesn't involve the other two, despite 14 15 that, you include under Column A five deaths attributable to prescription opioids, right? 16 17 It's not that we don't have a value, we Α 18 just know that the value is between zero and nine. 19 So a reasonable approximation is to use the midpoint. 20 I'm not quibbling right now with the Sure. 21 reasonableness of what you did. I'm just trying to understand it. So you say it's not that you don't 22 have a value, it's just that you don't know if the 23 24 value is between zero and nine. That means the value

Page 100 picked to estimate, by virtue of just sticking the 1 2 number five into Column E, you come up with two estimates for Column F that are both larger than any 3 single year between 1999 and 2012 where you had actual data, right? 5 And there are other years where the 6 7 estimate is zero. Sometimes it's higher, then sometimes it's smaller than the average. That's kind 8 9 of how math works. And so as you talked about before, if you 10 11 had stuck to calculating the average based on those 12 years for which you can actually count a number of 13 deaths in the -- from the CDC WONDER database, you would have had 25 deaths that you could count over 14 14 15 years, correct? 16 MR. ARBITBLIT: Objection. BY MR. METZ: 17 18 That's what's reflected in --0 19 Α No. 20 That's what's reflected in Column J of 21 Exhibit 10, right? 22 MR. ARBITBLIT: Objection. 23 That's not right. Α No. 24 Are you able to count up more than 25 Q

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A Yes. In the other year it was three, which is the average of all years. Some years it's going to be lower, some years it's going to be higher.

That's why you use the average.

Q Well, just to be clear, it's the average of all years when you add in the 17 combined that you include for 2001 and 2003, right?

A It's also the average if you use the eight years for which you had data, which there were data available. It wasn't suppressed.

Q And despite two of the three most recent actual years being zero, you -- under the method you're now using, you add three additional prescription fentanyl deaths for 2013 by assumption, correct?

A I disagree with the premise of the question. I added three additional prescription fentanyl deaths, not despite there being two years in which it wasn't three, but because the average for all years was three.

Q I might need to go back over what we just went over, to explain how you got to that average.

But you're adding three in 2013 notwithstanding that in 2012 and in another recent

Page 106 year before 2012, the number was zero, right? 1 2 MR. ARBITBLIT: Objection. 3 Α I'm adding three because that was the 4 average for all years. And for 2014, you add three more deaths in 5 those categories of prescription opioids overdoses 6 7 that are attributable to synthetic opioids and not other prescription opioids, right? 8 9 2014, I add three deaths attributable to 10 prescription opioids that did not have a code of T40.2 or T40.3. 11 12 And you did the same thing for 2015. You 13 added three more there by assumption, correct? 14 That's right. 15 And then you did the same thing for 2016, 16 you added three more deaths in there by assumption as well, correct? 17 18 MR. ARBITBLIT: Objection. Objection. 19 Α Yes. 20 And then for 2017 you added three more 21 deaths by assumption as well, correct? I'm sorry, it's not by assumption. It's 22 because that's the method that I use to estimate 23 24 the -- it's not an assumption, it's an estimate.

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submissions provided, you wouldn't find those citations there either, would you?

A Citations for?

- Q Well, I'll put it this way. You wouldn't find a discussion of that methodology of attributing the mean point number and the reliability of doing so, you wouldn't find anywhere an explanation that that's a reliable methodology?
- A I didn't include a section in the report on replacing suppressed values with a mean value, but it's a commonly used imputation method for like the last hundred years of epidemiology.
- Q So, for example, when you set out to prepare your second errata in which you changed the methodology that was disclosed in your report to a different methodology, you didn't take the moment then to write out what you were doing differently or why, you just gave it the final numbers, right?

  MR. ARBITBLIT: Objection.
  - A That's right.
- Q Now, in your second errata you also changed some language from your report that referenced the testimony of a Dr. Davies. Do you recall in that?

  I didn't hear your answer.

Page 127 And what is the fourth quarter? 1 0 2 Α 119. 3 Q And if you were to do quick math on that, how many new incident cases would that data support 4 5 having been diagnosed at either Cabell Huntington Hospital or a Marshall Health clinic? 6 7 Α About 500. I get 464, but we can call that around 500. 0 8 9 Do you consider that to be remarkably close to the 4,000 additional cases that would be needed to 10 11 validate your estimate of the change in population 12 from 2012 to 2013? 13 Well, if you add up 2011 to 2013, it's Α remarkably close to the 2011 to 2013 change in my 14 15 There is a dip in 2012 that reflects noise 16 in the data. So I think if you took a two-year time 17 span, it would be remarkably close. If you 18 cherry-pick one year where there is noise in the 19 data, it's less close. 20 But, I mean, the trends are completely map 21 on exactly to what I'm showing in the Exhibit 14. 22 MR. ARBITBLIT: Can we get a time 23 check, please? 24 MR. METZ: I've got ten minutes.

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